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Ryan, Mason & Lewis, LLP
Suite 205
1300 Post Road
Fairfield, CT 06824

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| EXAMINER |
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TRAN, TUAN A

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| ART UNIT | PAPER NUMBER |
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/608,597
Filing Date: June 27, 2003
Appellant(s): BUSKING, ERIK

Kevin M. Mason
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/13/2006 appealing from the Office action mailed 07/18/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|-----------|-----------|---------|
| 5,678,222 | HORNAK | 10-1997 |
| 5,530,929 | LINDQVIST | 6-1996 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Objections

Claim 9 is objected to because of the following informalities: the phrase "The invention in accordance with claim 8" should be changed to "The method in accordance with claim 8". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hornak et al. (5,678,222) in view of Lindqvist et al. (5,530,929).

Regarding claim 1, Hornak discloses a communication system (a receiver) with variable filter bandwidth (See figs. 12, 18) comprising: a first mixer circuit 123, 127, 133 disposed within a high frequency integrated circuit having input ports configured to receive a first communication signal and shift the frequency range of the first communication signal to a first frequency range; a second mixer 123, 127 disposed within the high frequency integrated circuit having input ports configured to receive the first communication signal and shift the frequency range of the first communication

signal to a second frequency range; an activation circuit 129, 135 coupled to the first and second mixer circuits so as to provide an activation signal that selectively activates any one of the mixer circuits; first and second filter circuits 205, 207 each configured to receive a signal from the first and second mixer circuits, when a corresponding one of the mixer circuits is activated and to provide a signal to a low frequency integrated circuit; and wherein when one of the mixer circuits is activated, the remaining mixer circuit does not generate an output voltage signal (See figs. 5A, 12, 18 and col. 9 lines 36-65, col. 12 lines 29-64, col. 18 line 44 to col. 19 line 10). However, Hornak does not mention that an amplifier coupled to the first and second mixer circuits for providing the first communication signal to the first and second mixer circuits. Since receiver having an amplifier coupled to a mixer circuit for providing amplified communication signal to the mixer circuit is common in the art as shown by Lindqvist (See fig. 2); therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Lindqvist in configuring the system, as disclosed by Hornak, with an amplifier coupling to the mixer circuits for the advantage of improving the sensitivity of the system.

Claim 6 is rejected for the same reasons as set forth in claim 1, as method.

Regarding claim 2, Hornak & Lindqvist disclose as cited in claim 1. Hornak further discloses the first and second frequency ranges are substantially the same (See col. 9 lines 62-65).

Claim 7 is rejected for the same reasons as set forth in claim 2, as method.

Regarding claims 3-4, Hornak & Lindqvist disclose as cited in claim 1. Hornak further discloses the filter circuits are bandpass filters wherein the frequency characteristics of the bandpass filters are different from each other (See col. 9 lines 62-65, col. 18 lines 60-63).

Claim 8 is rejected for the same reasons as set forth in claim 3, as method.

Regarding claim 5, Hornak & Lindqvist disclose as cited in claim 1. Hornak further discloses the termination impedance of the output stage of each of the mixer circuits substantially matches the termination impedance of the input stage of each one of the bandpass filters (See col. 19 lines 3-7).

Claim 9 is rejected for the same reasons as set forth in claim 5, as method.

(10) Response to Argument

With respect to the appellant's argument filed on 12/13/2006, the responses are follows:

The appellant argued that Hornak and Lindqvist, alone or in combination, do not disclose or suggest that when one of the mixer circuit (or the first mixer circuit) is selectively activated, the remaining mixer circuit (or the second mixer circuit) does not generate an output voltage signal (limitation of independent claim 1 or independent claim 6) as well as the step of shifting the frequency range via each mixer circuit to substantially the same frequency range (limitation of dependent claim 7) (See Appeal Brief, Argument section, page 3-5). The examiner respectfully disagrees with the appellant's argument. As shown in figure 5A, figure 12, or figure 18 of Hornak:

The first mixer circuit {123, 127} (as bolded) is selectively activated as the switch 135 is in position A upon receiving activation signal from activation circuit 129. The first mixer circuit downconverts received input communication signal using local oscillator signal without phase shift to provide an I-phase (in-phase) output intermediate frequency (IF) signal (shifting the frequency of the received input signal to intermediate frequency) as illustrated below (See Hornak, col. 12 lines 29-55).

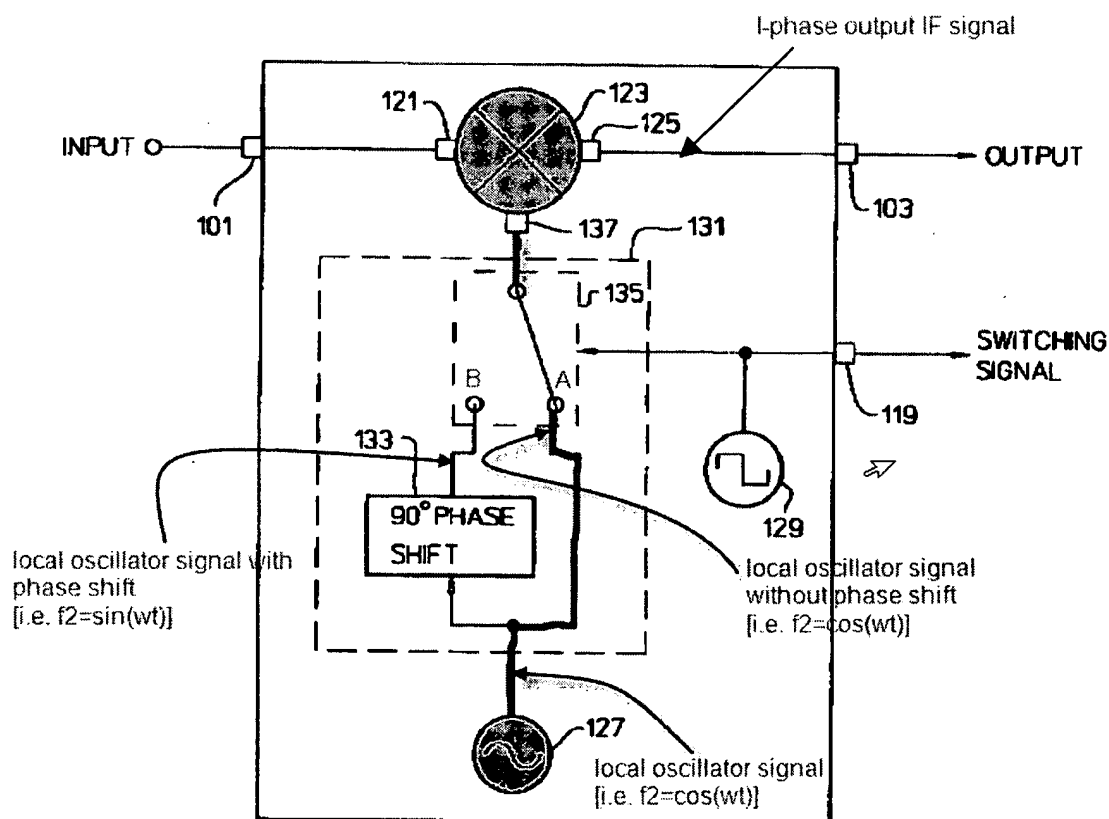
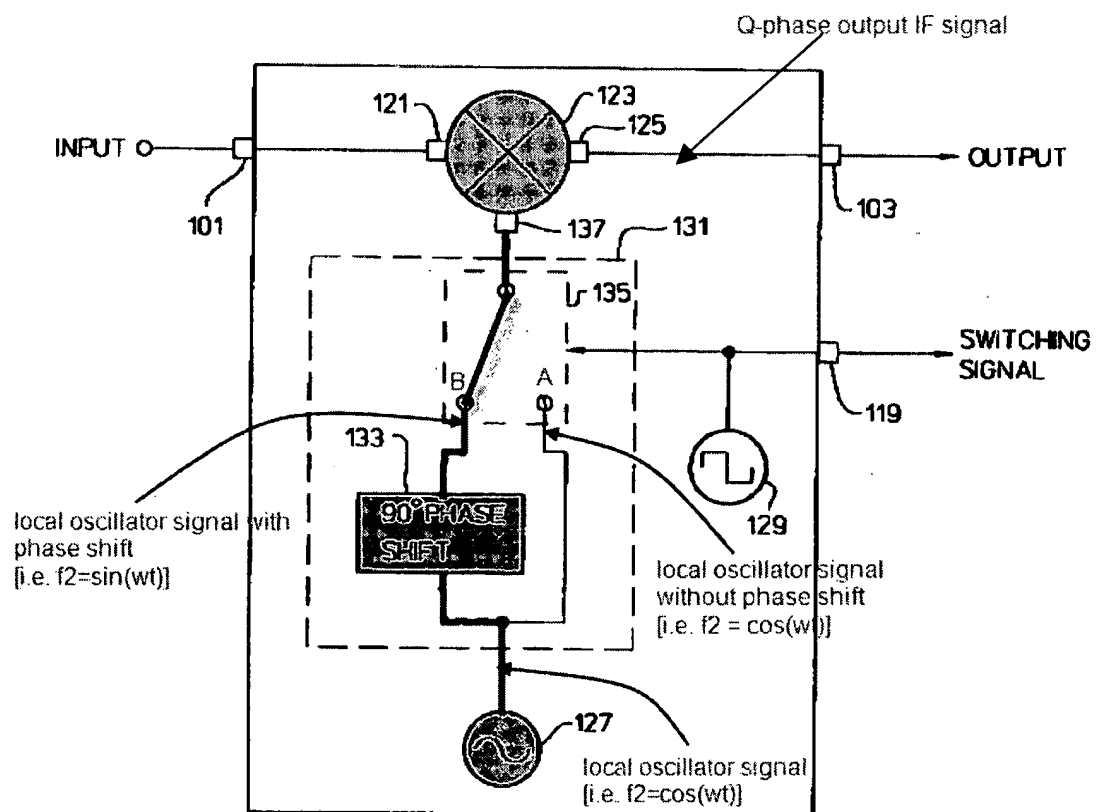


FIG. 5A

The second mixer circuit {123, 127, 133} (as bolded) is selectively activated as the switch 135 is in position B upon receiving activation signal from activation circuit 129. The second mixer circuit downconverts the received input communication signal using local oscillator signal with 90° phase shift to provide a Q-phase (quadrature-phase) output intermediate frequency (IF) signal (shifting the frequency of the received input signal to intermediate frequency) as illustrated below (See Hornak, col. 12 lines 29-55).

**FIG. 5A**

As illustrated above, Hornak clearly shows that when the switch is either in position A or position B, only one mixer circuit is activated to downconvert (frequency shifting) the received input communication signal to generate output voltage signal (I-phase output IF signal or Q-phase output IF signal) while the other mixer circuit is not. Further, since the received input communication signal is mixed (multiplying) by either the first mixer circuit or the second mixer circuit with one local oscillator signal with or without phase shift, it should be understood by person with ordinary skill in the art as well as being shown in figure 10 of Hornak that the output IF signals (I-phase output signal and Q-phase output signal) will have the same frequency range. Therefore, Hornak in combination with Lindqvist would arrive to claimed subject matters recited in independent claims 1 and 6 as well as dependent claim 7.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Tuan Tran

March 17, 2007

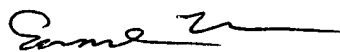
Conferees:

Matthew D. Anderson – Supervisor Patent Examiner



Matthew D. Anderson
Supervisory Patent Examiner

Edward Urban – Supervisor Patent Examiner



EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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